



SEMINAR ANNOUNCEMENT

TITLE: An Overview of Automatic Differentiation and Introduction to the OpenAD/F Tool

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Automatic differentiation is an established technique for computing local sensitivities of complex simulations. Modern automatic differentiation tools typically produce code that meets or exceeds the performance of hand-coded derivative computations. Automatic differentiation has been used extensively in the geosciences and aeronautical engineering, but it also has the potential to be a useful tool for nuclear reactor design and evaluation. An overview of automatic differentiation and how it can be applied effectively in a variety of scenarios will be discussed. A brief survey of available tools and details of the OpenAD/F tool for Fortran 95 will also be provided. Preliminary experiences in applying OpenAD/F to the ORNL SCALE software with the codes CENTRM and PMC will be described.